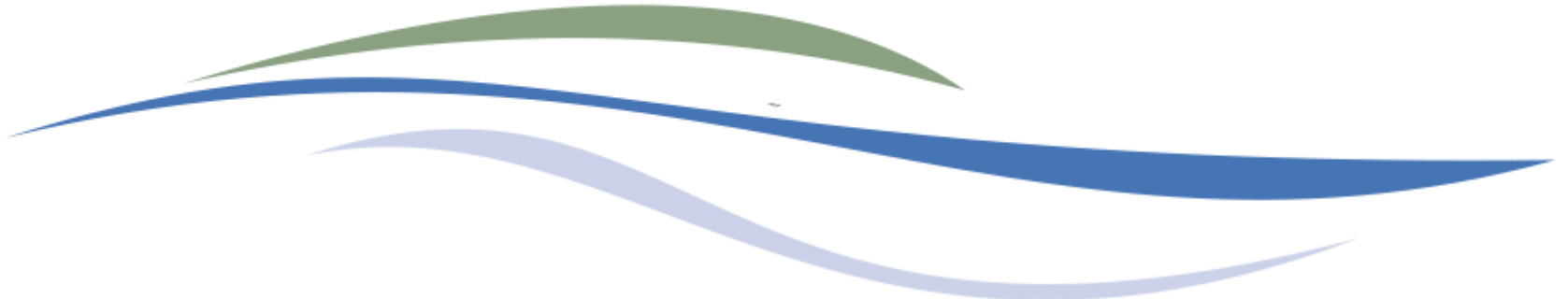


Low Impact Development Principles Project

OPEN HOUSE AGENDA

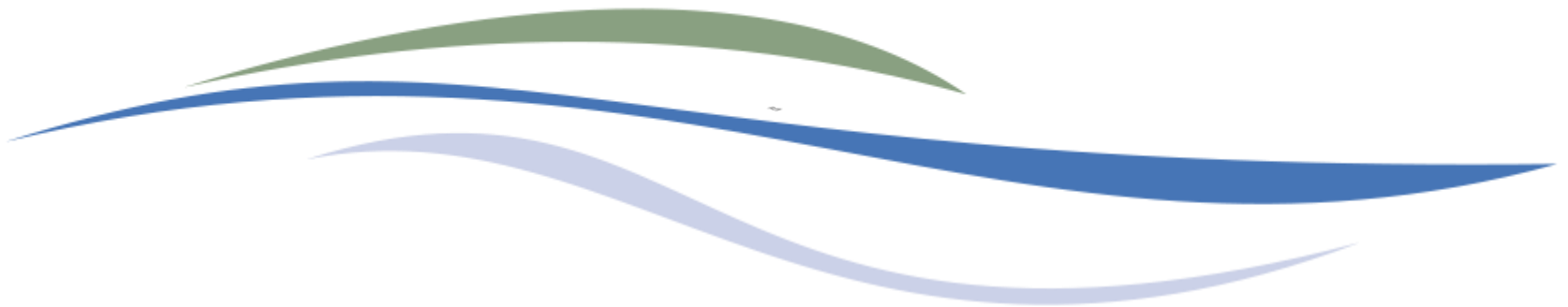
Doors Open:	6:00 pm
Open House/Informal Discussion:	6:00 pm-6:30 pm
Presentation of Proposals and Process:	6:20 pm-6:50 pm
Open House/Informal Discussion:	6:50 pm-8:00 pm
Open House Closing:	8:00 pm



Low Impact Development Principles Project

Bellevue LID Principles Project Open House

May 19, 2015



PROJECT TEAM

Project Lead:

Catherine Drews

Assistant City Attorney

City of Bellevue

(425) 452-6134

cdrews@bellevuewa.gov

Here today:

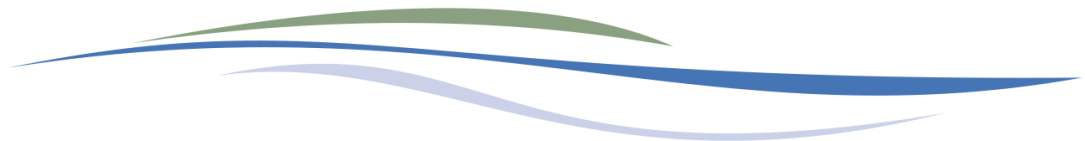
Paul Bucich (City of Bellevue)

Monica Chalik (City of Bellevue)

Wayne Carlson (AHBL)

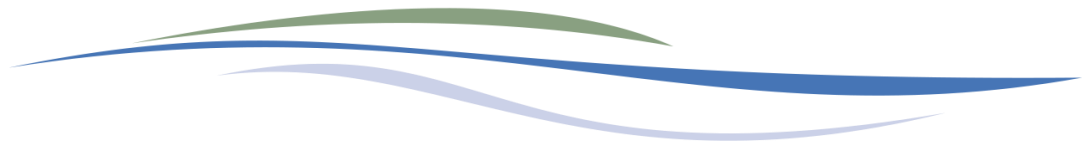
Brittany Port (AHBL)

Low Impact Development
Principles Project



PRESENTATION OVERVIEW

- I. Why We Are Here
- II. What is LID?
- III. Opportunity Analysis/Areas of Focus
- IV. Amendment Proposals
- V. Project Schedule
- VI. Staying Involved



I. Why We Are Here

Low Impact Development
Principles Project

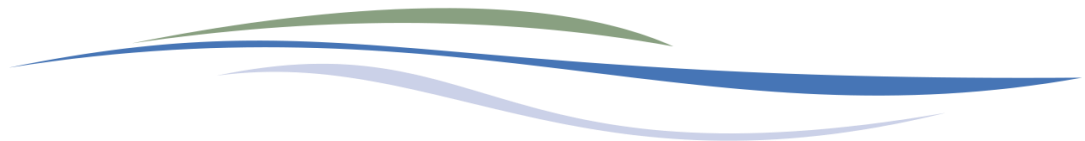


Why We Are Here

We are here to share with you the City's proposals to integrate low impact development (LID) principles into the City's existing codes and enforceable standards for new and redevelopment projects. This is a requirement under the City's NPDES Municipal Stormwater Permit.

The City currently has codes that are quite supportive to the use of LID principles, but there were opportunities that stakeholders, involved members of the public, and City staff identified.

We are here to share with you the proposals and solicit your feedback!

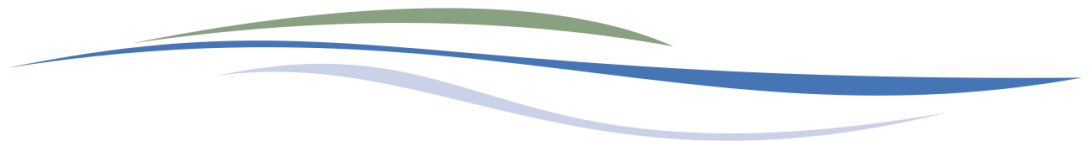


Why We Are Here

Why this is important?

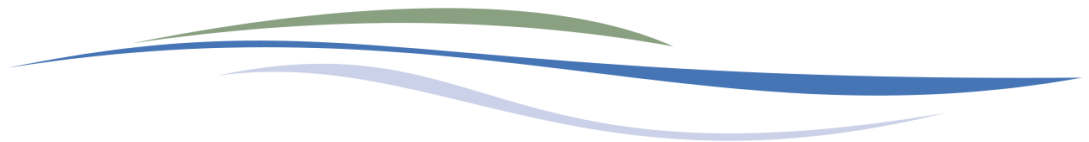
The City's existing standards for tree retention and canopy enhancement, impervious surface coverage, and clustering for new and redevelopment projects are proposed to be amended to respond to the goals of integrating LID into the City's codes and standards as well as supporting other City policy initiatives.

These amendments will support City's reputation as a "city in a park" as well as policy objectives such as the Environmental Stewardship Initiative which seeks to achieve a City-wide tree canopy of 40 percent.



II. What is LID?

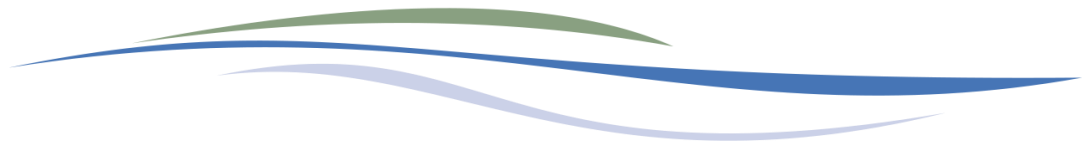
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What is LID?

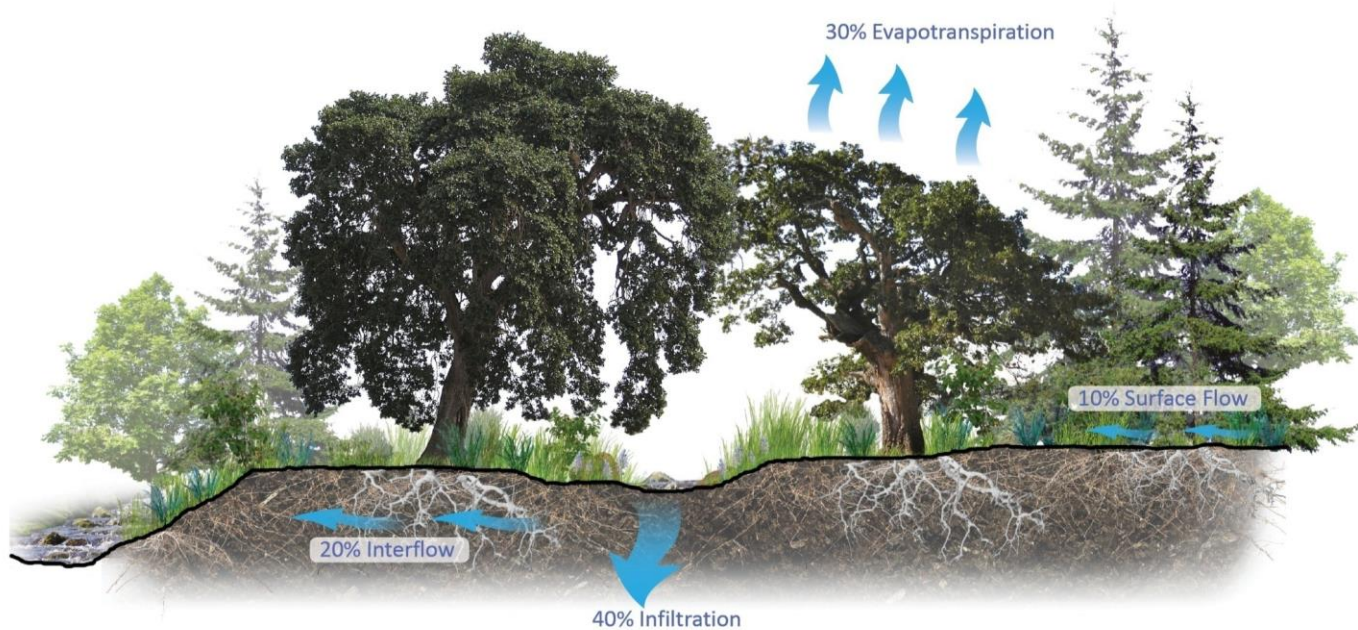
“Low-impact development (LID) is a stormwater and land use management strategy that strives to mimic pre-disturbance hydrologic processes (infiltration, filtration, storage, evaporation, and transpiration) by emphasizing conservation, use of on-site natural features, site planning, and distributed stormwater management practices that are integrated into a project design.”

*Source: Department of Ecology's Phase II
NPDES Municipal Stormwater Permit*

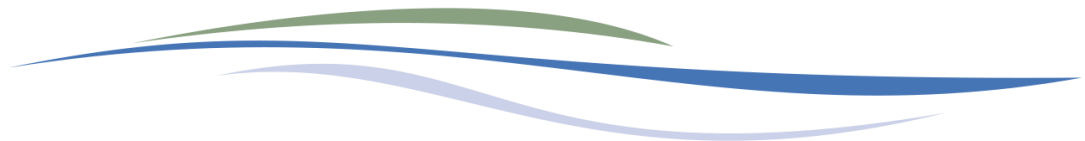


What is LID?

Pre-Development Hydrologic Conditions

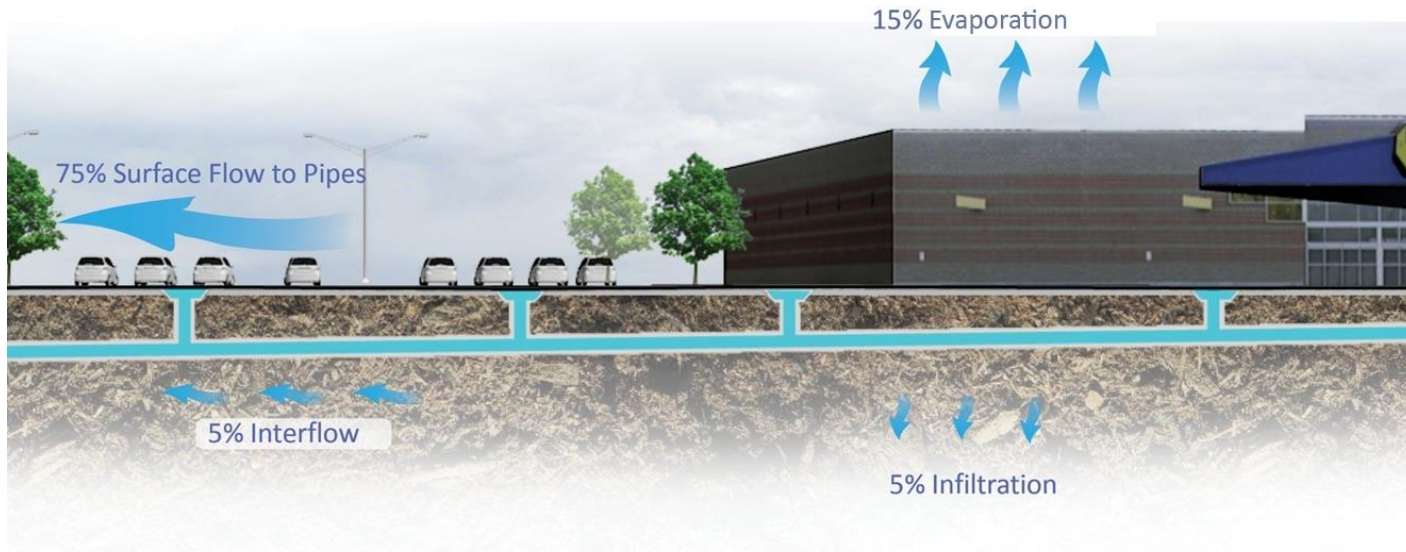


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What is LID?

Pre-Development Hydrologic Conditions



Low Impact Development
Principles Project



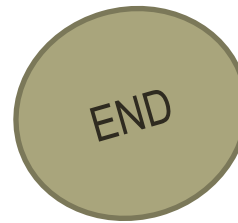
What is LID?



LID Principles

Site Layout:

- Retain vegetation
- Minimize construction footprint
- Minimize impervious surfaces
- LID principles may not apply (area and context sensitive)



LID BMPs

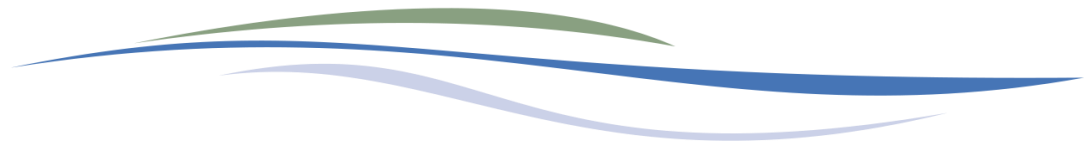
Engineering controls:

- Clear and Grade

Stormwater controls, such as:

- Rain gardens & bioretention facilities
- Permeable pavements
- Vegetated roofs, cisterns, pin foundations

Aggressive use of LID techniques along with best conventional engineering techniques such as detention vaults and ponds to manage high flows

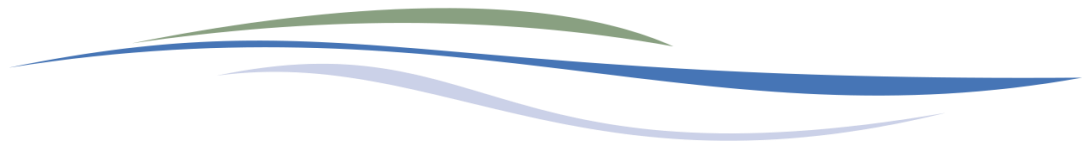


What is LID?

What the Permit Says:

Mimic pre-disturbance hydrologic functions with:

- Engineering Practices: LID best management practices (BMPs) (engineered facilities) required where feasible – *meaning we will still see conventional facilities such as ponds and vaults along with LID practices*
- Land Use Management Practices: LID principles of reducing vegetation loss, reducing impervious surface coverage, and reducing stormwater runoff

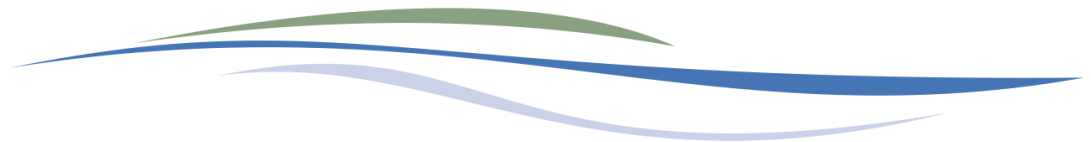


What is LID?

Conventional stormwater practices: Ponds & Vaults



Low Impact Development
Principles Project



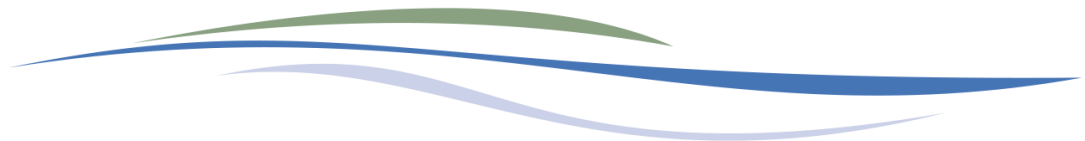
What is LID?

Required BMPs (unless infeasible)

Rain Gardens, Bioretention and Permeable Pavement



Low Impact Development
Principles Project



What is LID?

Required BMPs (unless infeasible)
Dispersion, Downspout Dispersion
Sheet Flow, and Perforated Stub
Connections

Sheet Flow



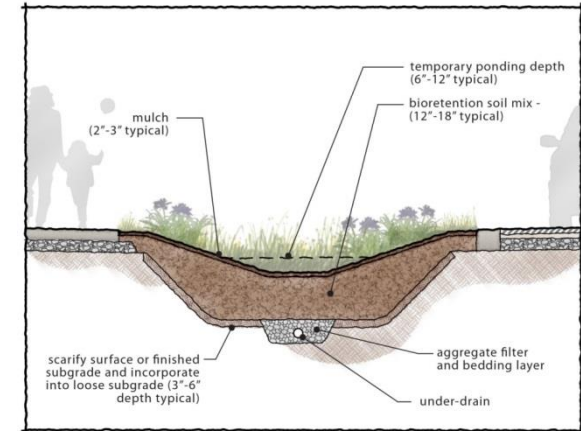
Dispersion



Downspout Dispersion



Perforated Stub Connection



Low Impact Development
Principles Project

What is LID?

Optional BMPs – permittees may opt to allow or require

Vegetated roofs



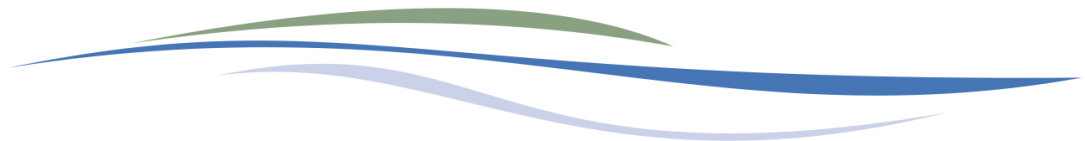
Rainwater Harvesting



Pin Foundations



Low Impact Development
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What is LID?

Incorporate LID Principles in Development Related Codes & Standards

- Reduce impervious surface coverage
- Reduce native (or adapted) vegetation loss
- Reduce stormwater runoff

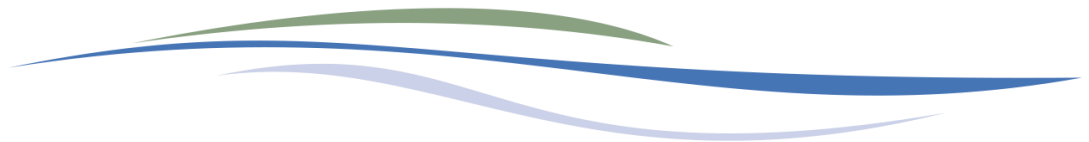
Thereby making LID the preferred and commonly used approach to site development



Low Impact Development
Principles Project

A decorative graphic consisting of several overlapping, wavy lines in shades of blue and green, flowing from left to right across the bottom of the slide.

III. Opportunity Analysis & Areas of Focus



Opportunity Analysis / Areas of Focus

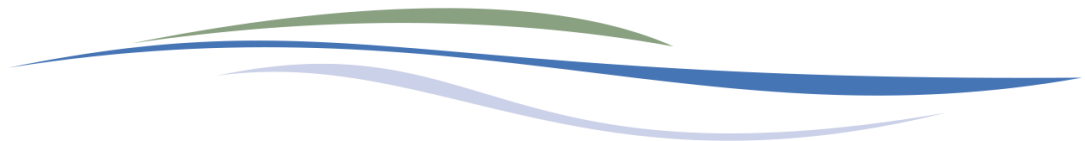
City Council Project Interest Statement:

Bellevue supports the objective of maintaining the region's quality of life including that of making low impact development the preferred and commonly used approach to site development.

Council approved principles guiding this project:

- Bellevue Appropriate
- Recognize and Seek to Balance Competing Needs
- Build On Existing Information and Programs
- Engage Stakeholders
- Maintain Bellevue's Compliance Record with its NDPES Stormwater Permit

Low Impact Development
Principles Project

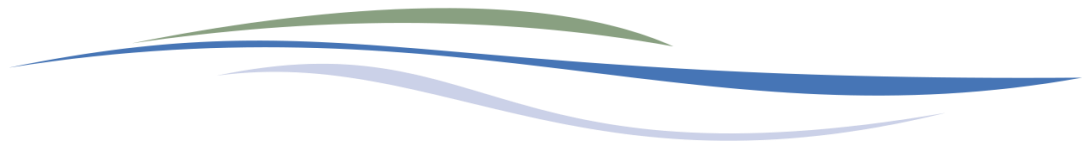


Opportunity Analysis / Areas of Focus

Opportunity Analysis

Reviewed the following development-related codes, rules, standards, or other enforceable documents for **opportunities** to incorporate and require LID principles and LID BMPs.

Title 14 Transportation Code
Title 20 Land Use Plan
Title 22 Development Code
Title 23 Construction Code
Title 24 Utilities Code
Development Services Handouts
Fire Department Development Standards
Critical Areas Handbook
Clearing and Grading Development Standards
Inspection and Construction Guidelines
Transportation Design Standards
Utilities Surface Water Design Standards
Parks Environmental Best Management Practices



Opportunity Analysis / Areas of Focus

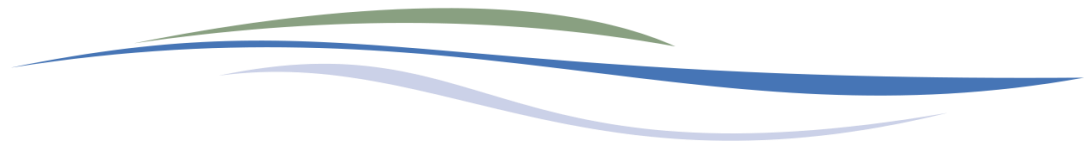
Areas of Focus: Guides next phase of work and discussions with public, commissions, and boards – *outcome of this work will inform future recommendations*

LAND USE CODE

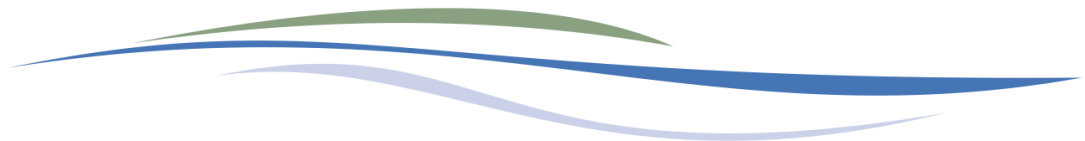
- Evaluate use of LID early in the site design process
- Reduce impervious surface coverage
- Preserve and enhance tree canopy
- Improve options for clustering development

TRANSPORTATION DESIGN CODE AND STANDARDS

- Reduce impervious surfaces in rights-of-way
- Enhance tree canopy in transportation facilities



IV. Amendment Proposals: Impervious Surface Coverage



Proposals: Impervious Surfaces

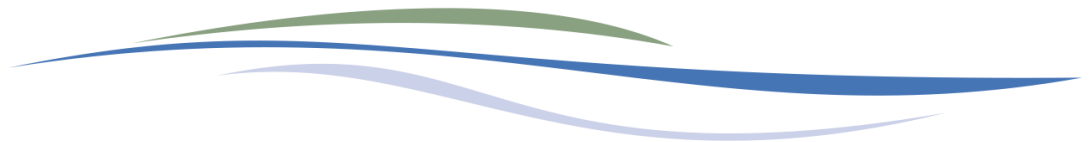
Establish a hard surface standard

What are hard surfaces?

“An impervious surface, a permeable pavement, or a vegetated roof.”

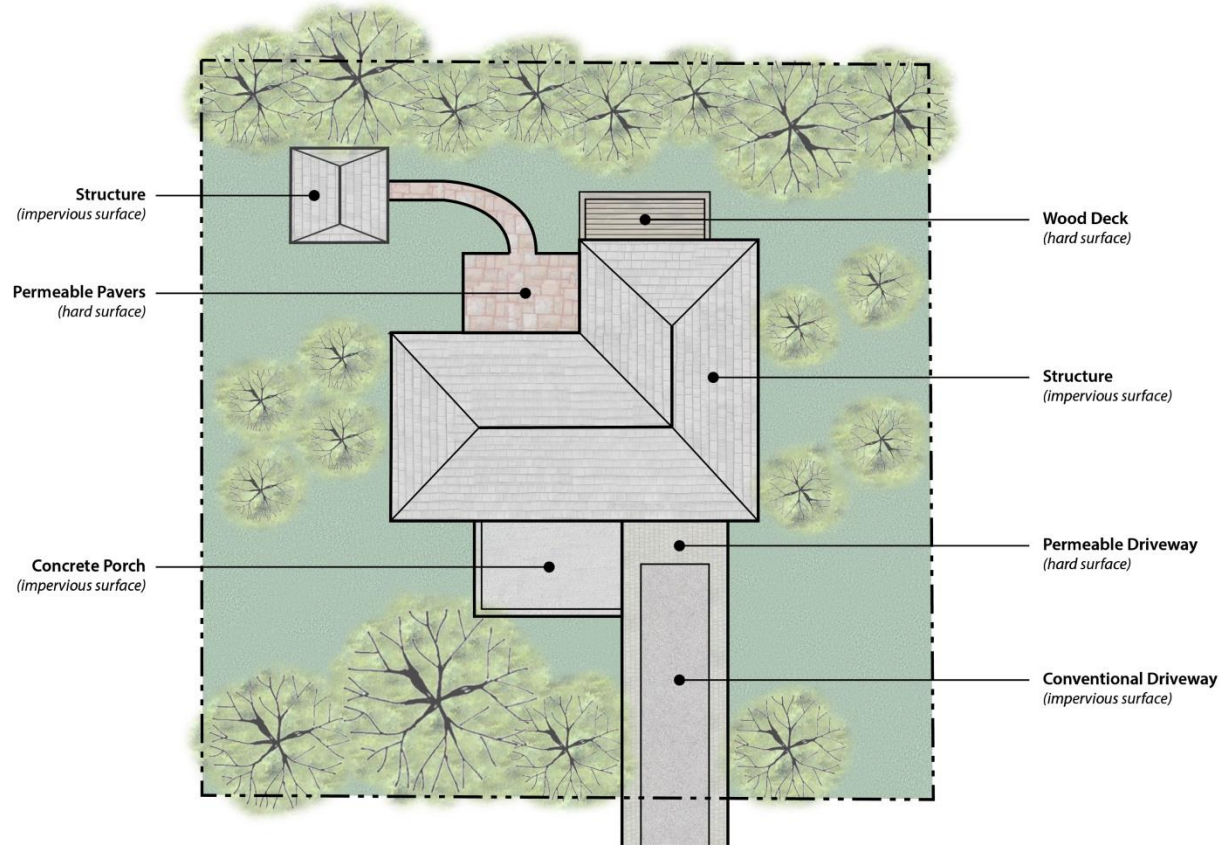


Low Impact Development
Principles Project

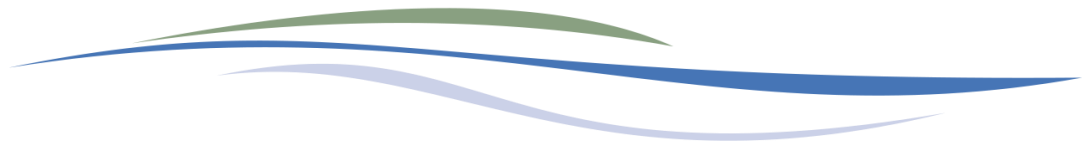


Proposals: Impervious Surfaces

Establish a hard surface standard

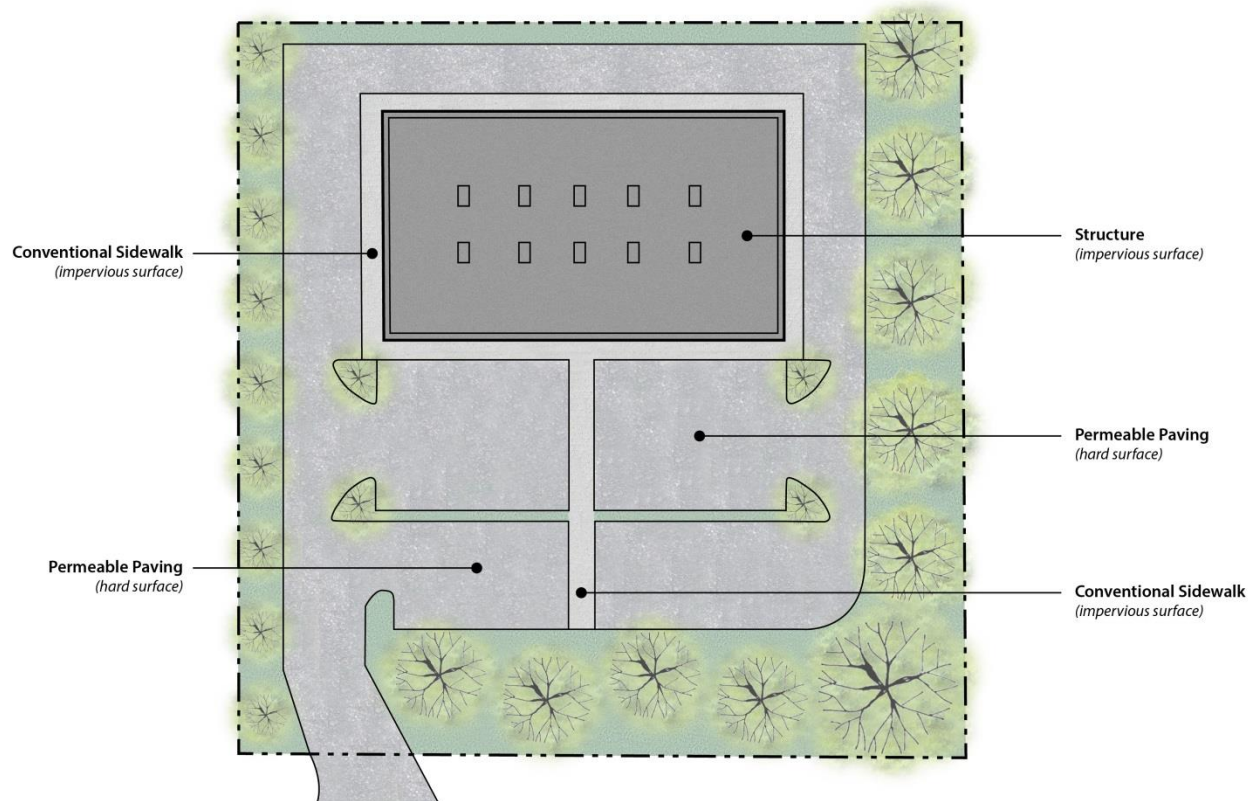


Low Impact Development
Principles Project



Proposals: Impervious Surfaces

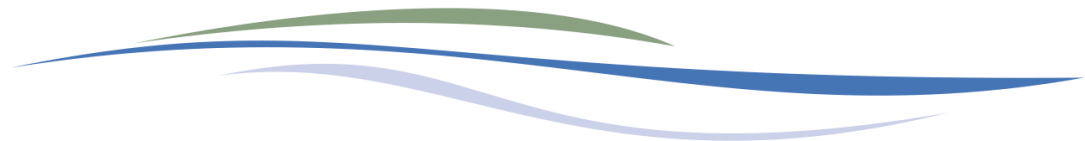
Establish a hard surface standard



Low Impact Development
Principles Project

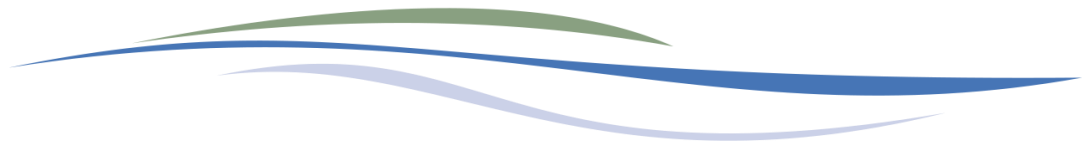
Proposals: Impervious Surfaces

STD LAND USE CODE REF	LAND USE CLASSIFICATION	RESIDENTIAL										
		R-1	R-1.8	R-2.5	R-3.5	R-4	R-5	R-7.5*	R-10	R-15	R-20	R-30
	DIMENSIONS	(43)	(43)	(43)	(43)	(43)	(43)	(43)				
	...											
	Maximum Lot Coverage by Structures (percent) (13) (14) (16) (26) (27) (37) (39)	35	35	35	35	35	40	40	35	35	35	35
	Maximum Impervious Surface (percent) (35) (37) (39) <u>(48)</u>	50 <u>40</u> (36)	50 <u>40</u> (36)	50 <u>40</u> (36)	50 <u>40</u> (36)	50 <u>40</u> (36)	55 <u>45</u> (36)	55 <u>45</u> (36)	80 <u>60</u>	80 <u>60</u>	80 <u>60</u>	80 <u>60</u>
	<u>Maximum Hard Surface Coverage (percent) (37) (39) (47) (48)</u>	<u>50</u>	<u>50</u>	<u>50</u>	<u>50</u>	<u>50</u>	<u>55</u>	<u>55</u>	<u>80</u>	<u>80</u>	<u>80</u>	<u>80</u>



Proposals: Impervious Surfaces

STD LAND USE CODE REF	LAND USE CLASSIFICATION	Professional Office	Office	Office/Limited Business	Light Industry
		PO	O	OLB	LI
	DIMENSIONS	(8, 21)	(8, 21)	(8, 21)	(8, 21)
	Maximum Lot Coverage by Structures (percent) (13) (14) (16)	35	35	35	50
	Maximum Impervious Surface (percent) (35) (37)	80 <u>60</u>	80 <u>60</u>	80 <u>60</u>	85 <u>65</u>
	<u>Maximum Hard Surface Coverage (37) (47)</u>	<u>80</u>	<u>80</u>	<u>80</u>	<u>85</u>

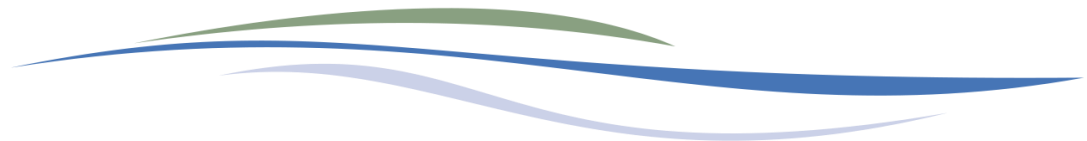


Proposals: Impervious Surfaces

STD LAND USE CODE REF	LAND USE CLASSIFICATION	General Commercial	Neighborhood Business	Community Business	Factoria Land Use District 1	Factoria Land Use District 2	Factoria Land Use District 3
		GC	NB	CB	F1	F2	F3
	DIMENSIONS	(8, 21)	(8, 21)	(8, 21)	(28)	(21, 31)	(21, 32)
	Maximum Lot Coverage by Structures (percent) (13) (14) (16)		35			35	40
	Maximum Impervious Surface (percent) (35) (37)	85 <u>65</u>	80 <u>60</u>	85 <u>65</u>		80 <u>60</u>	80 <u>60</u>
	<u>Maximum Hard Surface Coverage (37) (47)</u>	<u>85</u>	<u>80</u>	<u>85</u>		<u>80</u>	<u>80</u>

(47) See LUC 20.20.425 for exceptions and performance standards relating to hard surfaces.

(48) Where the application of permeable pavement has been determined to be infeasible using the infeasibility criteria in the 2014 Department of Ecology Stormwater Management Manual for Western Washington, now or as hereafter amended, the maximum impervious surface coverage may be exceeded, up to the maximum hard surface coverage allotment.



Proposals: Impervious Surfaces

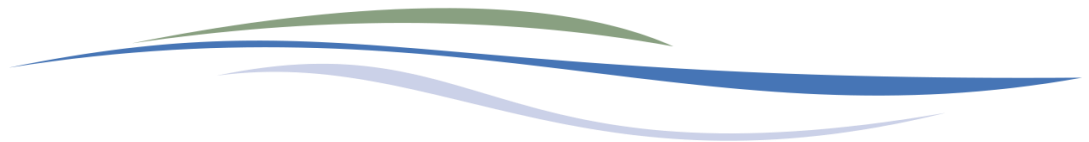
Transportation Code includes amendments that explicitly allow and encourage the following:

- Permeable surfaces such as porous concrete and permeable pavers for sidewalks
- Bioretention within landscape areas



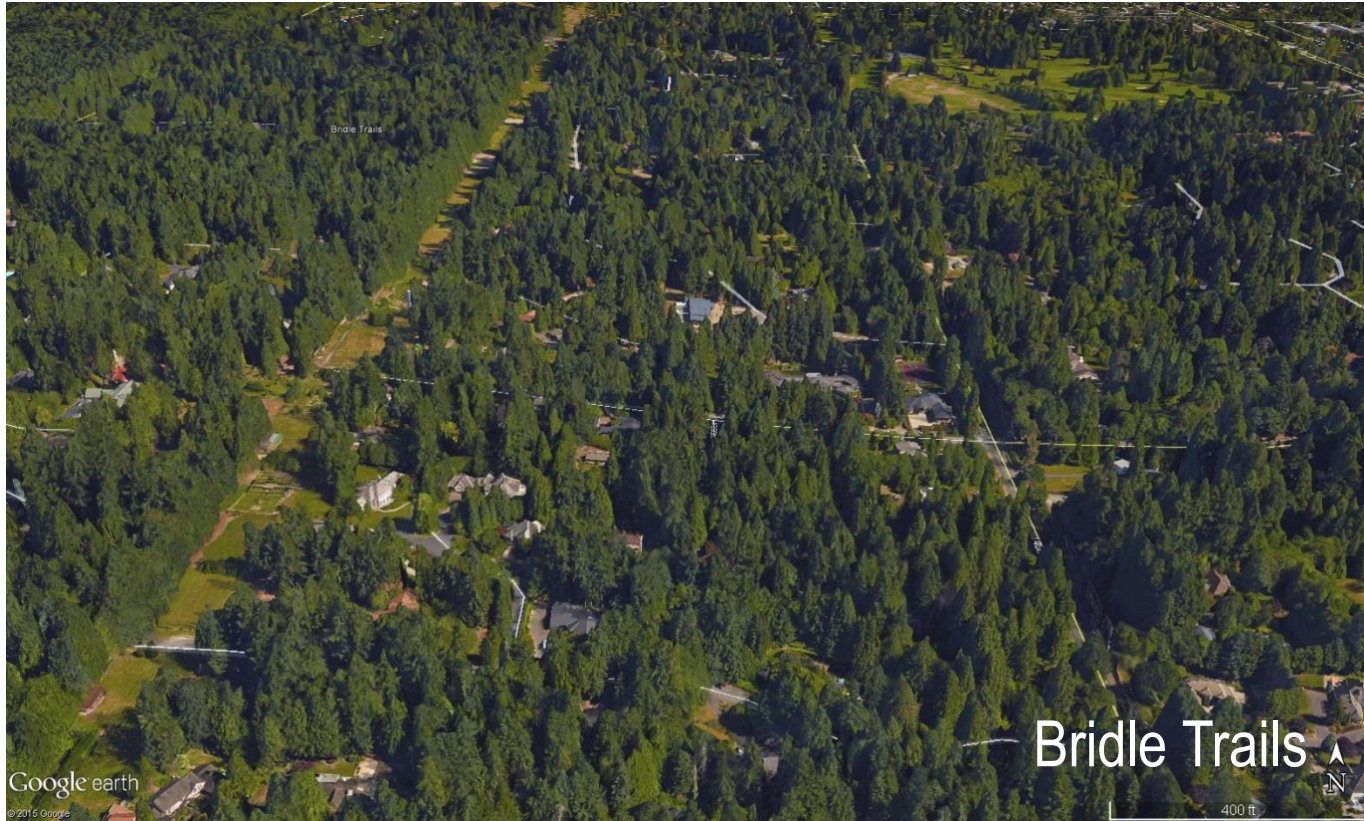
Tree Retention

Low Impact Development
Principles Project

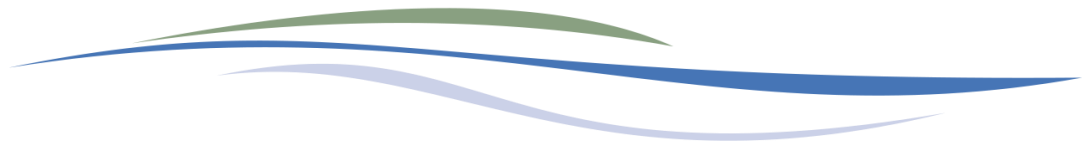


Proposals: Tree Retention

Tree Retention for New and Redevelopment Projects



Low Impact Development
Principles Project



Proposals: Tree Retention



Tree Removal on Single-Family Lots October 2010

May I remove trees from my property?

Yes, if: (1) There are no restrictions on your property. Generally, you can remove several trees without a permit. Tree removal that results in over 1,000 square feet of disturbance of the ground requires a clearing & grading permit. (2) Your property is NOT located in an R-1 zone in the Bridle Trails Subarea. (3) You are not proposing development that adds 20% additional impervious surface on your lot. Prior to removal of any trees you should contact the Land Use desk to ensure compliance with applicable codes.

What restrictions may prevent me from removing any trees I want from my property?

Generally, a decision about tree removal is yours to make. However, there can be restrictions for designated trees to remain, regardless of the amount of disturbance of the ground. If you are considering removing trees on your property, please check the following:

Plat/PUD Restrictions: Does your subdivision or Planned Unit Development (PUD) have restrictions which prohibit tree removal? For example, does the plat or PUD document contain Native Growth Protection Areas (NGPAs), Retained Vegetation Areas (RVAs), or a Tree Retention Plan?

Critical Areas: Does your property contain a critical area (steep slope, stream corridor, wetland, etc.) or is one located adjacent to or near your property? If you are unsure, a land use planner can assist you in making this determination through the Land Use desk in Development Services.

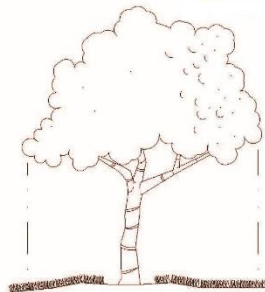
Private Agreements: Is your property subject to private contracts, covenants, or homeowner associations that might affect your ability to remove trees? Please note that the city does not enforce such private restrictions. If your property is located within a Bridle Trails R-1 zoning

district, refer to Handout 27a for restrictions.

Any vegetation removal, including prohibited within the above areas, if trees are diseased or deemed hazardous by a certified arborist, can be removed if a permit is obtained from the Land Use desk in Development Services. In such cases, the city will require other mitigation in place of the trees. Always check with a land use planner for needed permits and approvals for pruning, or removing trees within the above areas.

May I remove trees located within the city right of way?

Removal of trees within the city right of way may require a right of way use permit from the Transportation's Right of Way Division, for further information.



Tree Canopy Area
elevation view

What if I want to remove more than one tree?

For most developed single-family lots, you would determine the number of trees to be removed and multiply by 50 square feet. If the total does not exceed 1,000 square feet, a permit is not required. For larger or less developed lots, total disturbance must be estimated based on the expected number of trees to be removed, foot and vehicle traffic, construction of access, and felling and dragging of trees.

Are there other tree retention requirements?

For new single-family structures or additions that result in 20% increase in impervious surface on a residential use, you must retain 30 percent of the diameter of trees existing in the site retention rule is also for plat and subdivisions.

any healthy tree 8" or greater diameter at 4 feet above existing

Disturbance of the

ground results from clearing or destroys vegetation, exposure of the underlying soil, exposure of the existing tree canopy where trees are growing under the tree. Disturbance results from the physical removal of trees, where foot and vehicle access roads, felling of trees, and excavation of ground.

What if the tree I want to remove is less than 1,000

For most single-family lots with a house, tree removal is done by hand or by using a crane. In these cases, disturbance would be minimal and can be estimated at 50 square feet of disturbance for each living evergreen or deciduous tree, eight inches or greater in diameter measured four feet above existing grade.

For larger and/or less developed areas, estimates of disturbance must be made on the anticipated amount of disturbance due to equipment access, tree felling, and dragging or skidding of trees.

What if I want to remove more than one tree?

For most developed single-family lots, you would determine the number of trees to be removed and multiply by 50 square feet. If the total does not exceed 1,000 square feet, a permit is not required. For larger or less developed lots, total disturbance must be estimated based on the expected number of trees to be removed, foot and vehicle traffic, construction of access, and felling and dragging of trees.

What if the tree removal will result in more than 1,000 square feet of disturbance of the ground?

A clearing & grading permit is required. Depending on the amount of tree removal proposed, site conditions such as critical areas, and other factors, the city might impose special conditions on the permit to minimize risk of damage to your site, surrounding properties, or the environment.

Can someone help me estimate how much disturbance of the ground will result from my tree removal?

The city's clearing & grading staff can help you with these estimates and with other questions related to tree removal. They can be reached at 425-452-2019.

Where can I get more information?

- BCC 23.76, Clearing and Grading Code
- LUC 20.25H, Critical Areas Overlay District
- LUC 20.20.900, Tree Retention

This document is intended to provide guidance in applying certain Land Use Code regulations and is for informational use only. It cannot be used as a substitute for the Land Use Code or for other city codes, such as the Construction Codes. Additional information is available from Development Services at Bellevue City Hall or on the city website at www.bellevuewa.gov.

For land use regulations that may apply to your project, contact the Land Use Information Desk in Development Services. Phone: 425-452-4188. E-mail: landusereview@bellevuewa.gov. Assistance for the hearing impaired: dial 711.

Prioritization of Tree Retention within New and Redevelopment Projects

Pin OAK – <i>Quercus palustris</i>
Red OAK – <i>Quercus rubra</i>

Threshold Diameter
24 in
6 in
30 in
12 in
6 in
30 in
24 in
6 in
24 in
6 in
6 in
12 in
24 in
6 in
6 in
30 in
20 in
30 in
30 in
23 in
30 in
12 in
12 in
30 in
30 in
24 in
16 in
9 in
16 in
30 in
30 in
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20 in
16 in
12 in
12 in
30 in
25 in
30 in
24 in
22 in
30 in
30 in

Proposals: Tree Retention

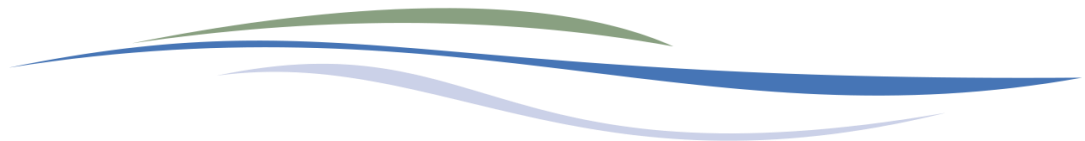
20.20.900 Tree retention and replacement.

.....

- D. Retention of Significant Trees for Subdivisions, Short Subdivisions, Planned Unit Development, Change in Lot Coverage, or Change in the Area Devoted to Parking and Circulation, Excluding Areas Located in the R-1 Land Use District in the Bridle Trails Subarea and for New or Expanding Single-Family Structures.

.....

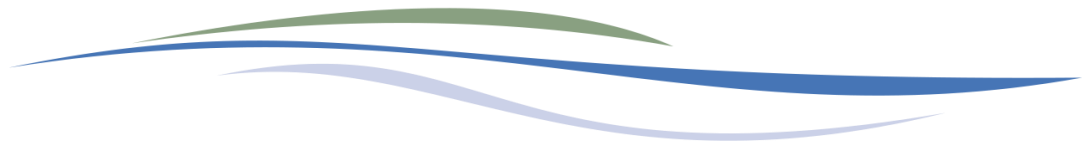
- 2. Site Interior.
 - a. In areas of the site other than the required perimeter landscaping area, the applicant must retain at least 15 percent of the diameter inches of the significant trees existing in this area; provided, that alder and cottonwood trees' diameter inches shall be discounted by a factor of 0.5. In the event of a conflict between this section at and LUC 20.25H "Critical Areas Overlay, section 20.25H shall prevail. In applying the requirement for retention of significant trees, the Director shall ~~consider~~ require the preservation of the following types of significant trees in the following order of a priority:



Proposals: Tree Retention

20.20.900 Tree retention and replacement (*continued*).

- i. Landmark trees as defined in LUC 20.50;
 - ii. ~~Healthy~~ Significant trees over 60 feet in height;
 - iii. Significant trees which form a continuous canopy;
 - iv. Significant trees located within the required rear yard, and the area between the rear line of the rear yard and 15 feet from the nearest building envelope; and
 - v. Significant trees which ~~contribute to the character of the environment, and~~ do not constitute a safety hazard.
 - ~~vi. Significant trees which provide winter wind protection or summer shade;~~
 - ~~vii. Groups of significant trees which create a distinctive skyline feature; and~~
 - ~~viii. Significant trees in areas of steep slopes or adjacent to watercourses or wetlands.~~
- b. The Director may approve retention of trees which do not meet the definition of significant trees as a contribution toward the sum of the diameter inches required under subsection D.2.a of this section if a group of trees and its associated undergrowth can be preserved.



Proposals: Tree Retention

20.20.900 Tree retention and replacement (*continued*).

....

3. For subdivisions, short subdivisions, and planned unit developments, the applicant shall retain a minimum of 30 percent of the diameter inches of significant trees existing on the total site area of the development; provided, that alder and cottonwood trees' diameter inches shall be discounted by a factor of 0.5. Priority of preservation of the following types of trees shall occur in the same order as specified above for the site interior.

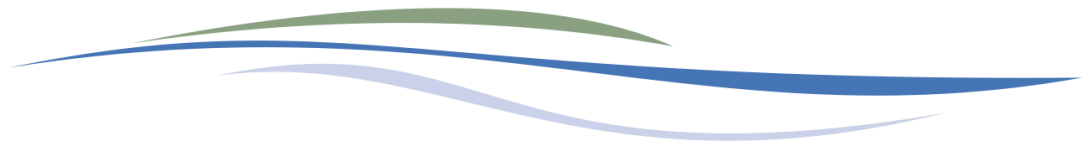
....

5. The applicant shall utilize tree protection techniques approved by the Director during land alteration and construction in order to provide for the continual healthy life of retained significant trees. The director may require assurance devices pursuant to 20.40.490 to ensure the continual healthy life of retained significant trees for a period of up to five years.
6. Any property where significant trees are retained to meet the requirements of this chapter shall include notice of the retained trees on the recorded survey, and shall include a reference to this section to ensure their continued retention.



Clustering

Low Impact Development
Principles Project



Proposals: Clustering

Clustering/PUD Code Provisions

- Findings related to the management of on-site soils and the minimization of impervious surface coverage will be required for PUD approval

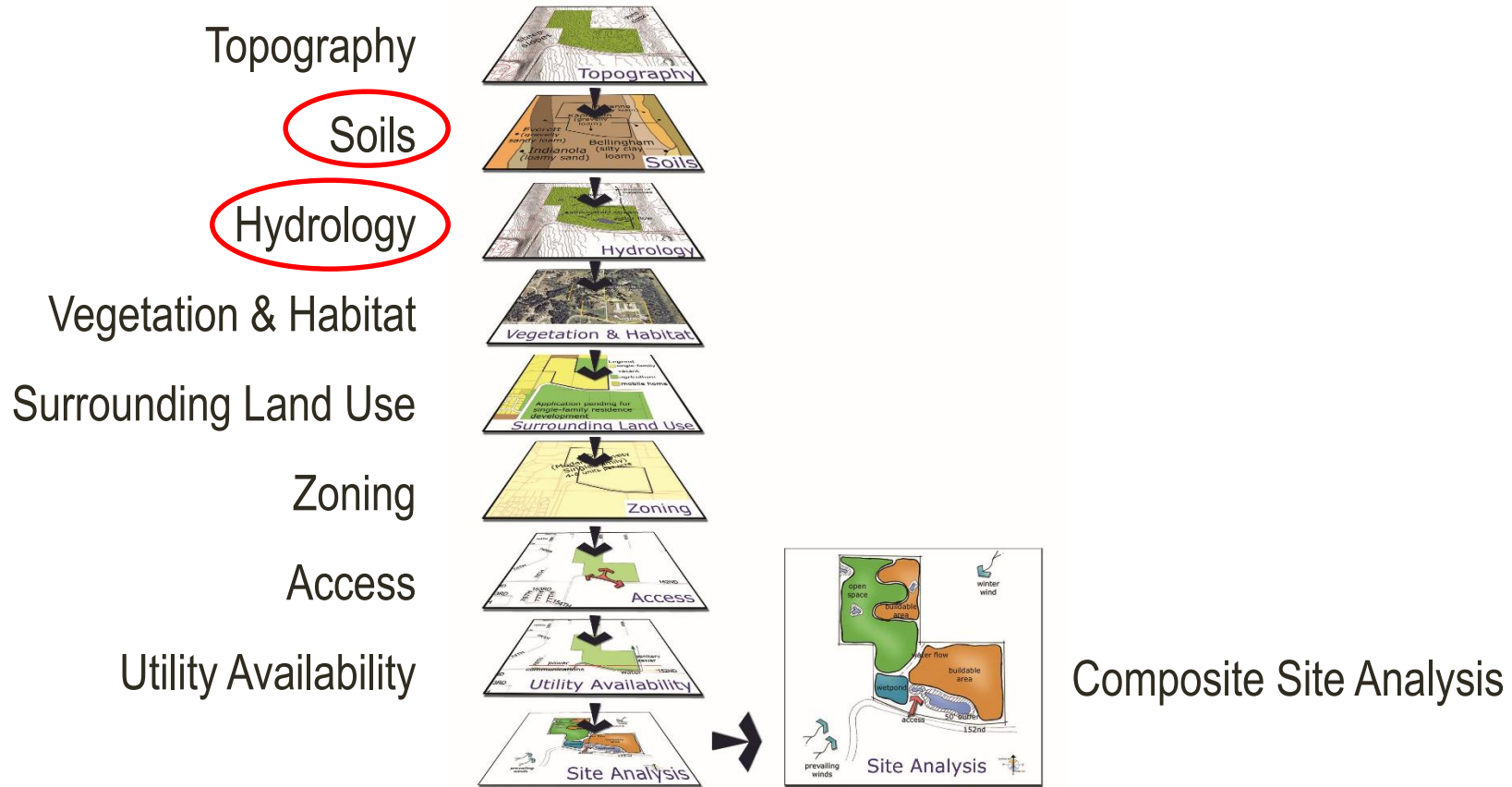


Site Design

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Principles Project



Proposals: Site Design



Proposals: Site Design



Submittal Requirements

1/1/2017

LARGE COMMERCIAL and MULTIFAMILY BUILDING PERMITS

- _____ **Major Project:** New commercial or multifamily building or addition, 4,000 square feet or more, which does not require SEPA review or SEPA review has been done under a prior land use approval. Includes demolition work when appropriate. (BB)
- _____ **Medium Project:** New commercial or multifamily building, addition or pool/spa, over 1,000 and less than 4,000 gross square feet. Includes clearing & grading, Land Use Exemption and/or demolition work when appropriate. (BM)
- _____ **Shoring:** Excavation and shoring of property adjacent to the City of Bellevue right of way. (BV)
- _____ **Detention Vault:** Stormwater detention structure. (BH)

To submit your application online use www.mybuildingpermit.com.

If you are applying in person at City Hall, submit the number of copies specified below for your application type.

Planner: _____ <input type="checkbox"/> Include clearing & grading work in this permit. (Over 1000 square feet of clearing; over 50 cubic yards of grading; over 2,000 square feet of new, replaced, or new plus replaced impervious surface; work in a Critical Area; or foundation removal) <input type="checkbox"/> Land Use Exemption	Type of Critical Area: <input type="checkbox"/> Geologic Hazard <input type="checkbox"/> Wetlands <input type="checkbox"/> Streams <input type="checkbox"/> Flood Hazard <input type="checkbox"/> Habitat Associated with Species of Local Importance <input type="checkbox"/> Critical Areas offsite within 100 feet <input type="checkbox"/> Shoreline	Check below if applicable: <input type="checkbox"/> Substantial Development <input type="checkbox"/> Shoreline Exemption with SEPA <input type="checkbox"/> Shoreline Exemption without SEPA
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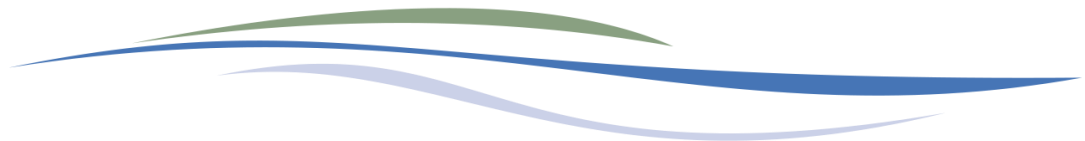
Initial for waiver by City of Bellevue Planner

This Chart	
Building Permit Application	
"Bill To" Form	
Preapplication Conference Letter	
Value of Improvements	
Issaquah or Renton School District Impact Fee Notification Form	
Site Plan A	
Site Plan B	
Shoring Plan and Details	
Geotech Shoring Design Calc	
Architectural Plan ^A	
Geotechnical Report	
<u>Soils Report^H</u>	
Boundary/Topographic Survey	
King Co. Health Dept. Approval	
IBC Pedestrian Protection Plan	
<u>Tree Protection and Preservation Plan^I</u>	
Structural Plan ^C	
Structural Calculations	
Civil Plan ^D	
Final Civil Detention Vault Detail Sheet	
Final Landscape Plan	

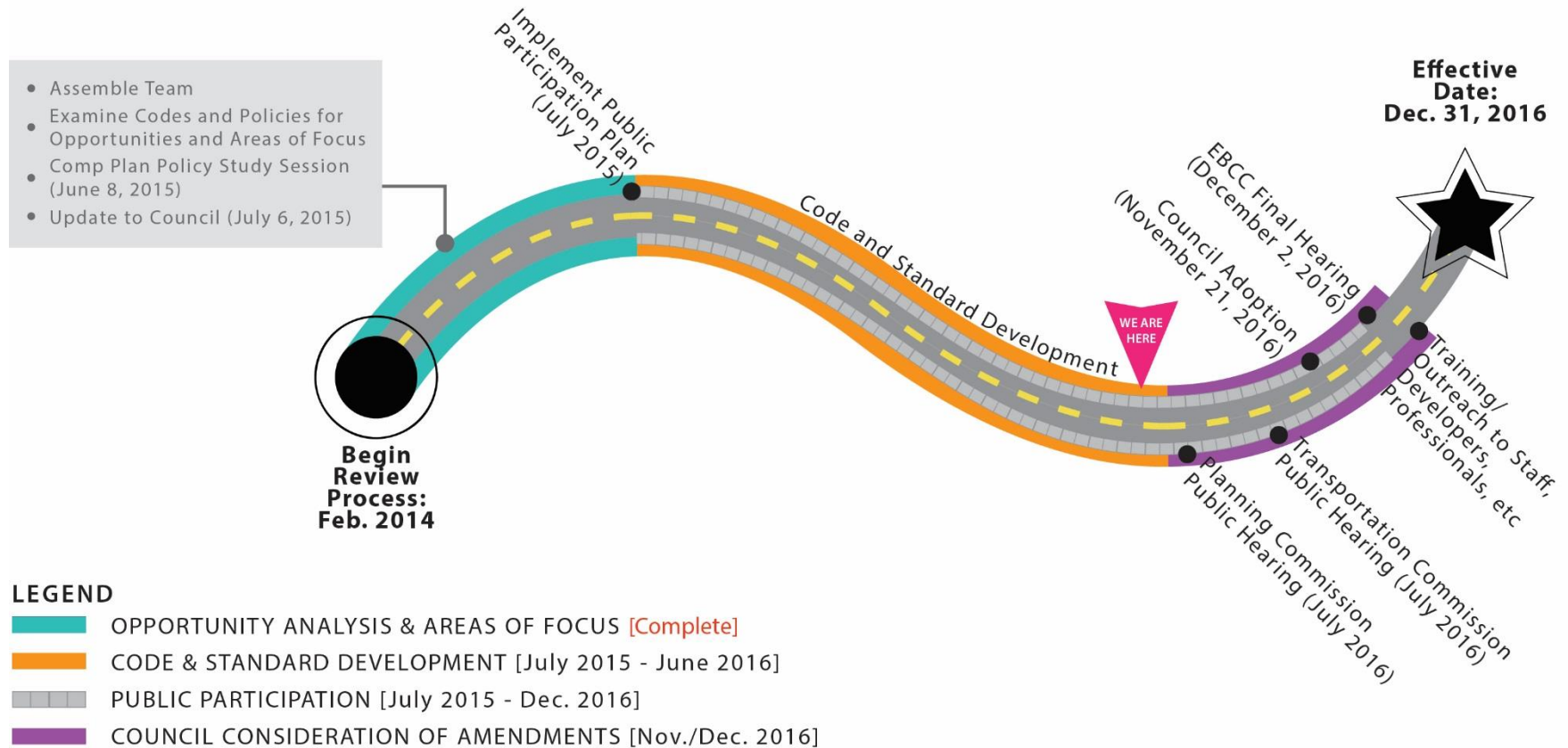
Initial for waiver by City of Bellevue Planner	Major Project	Medium Project	Shoring	Detention Vault
This Chart	1	1	1	1
Building Permit Application	1	1	1	1
"Bill To" Form	1	1	1	
Preapplication Conference Letter	If a conference was held, submit 1 copy.			
Value of Improvements				1
Issaquah or Renton School District Impact Fee Notification Form	1 (multifamily projects only)			
Site Plan A			6	6
Site Plan B	8	8		
Shoring Plan and Details			6	
Geotech Shoring Design Calc			2	
Architectural Plan ^A	4	4		
Geotechnical Report	2	2	2	1
<u>Soils Report^H</u>				
Boundary/Topographic Survey	7	7		
King Co. Health Dept. Approval	Footnote B			
IBC Pedestrian Protection Plan	3	3		3
<u>Tree Protection and Preservation Plan^I</u>				
Structural Plan ^C	2	2		4
Structural Calculations	1	1	2	1
Civil Plan ^D	5	5		
Final Civil Detention Vault Detail Sheet				3
Final Landscape Plan	5	5		

Low Impact Development
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V. Project Schedule



Project Schedule



Low Impact Development Principles Project

Project Schedule

Open Houses

May 17th, 10:00 am-12:00 pm

Bellevue City Hall
450 - 110th Avenue NE

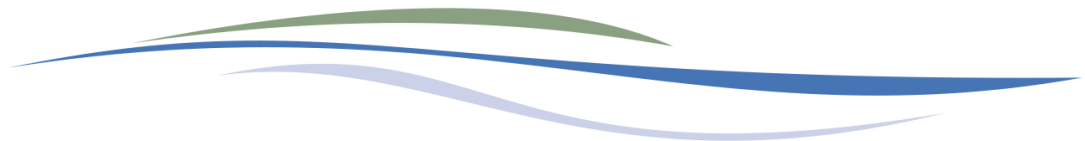
May 18th, 6:00 pm-8:00 pm

Lewis Creek Visitors Center
5808 Lakemont Boulevard SE

May 19th, 6:00 pm-8:00 pm

**Northwest Arts Center
9825 NE 24th Street**

Low Impact Development
Principles Project



Project Schedule

Meetings & Hearings

May 25th, 4:30 pm

June 7th, 6:00 pm

June 9th, 6:30 pm

June 22nd, 4:30 pm

July 13th, 6:30 pm

July 14th, 6:30 pm

Planning Commission (Study Session)

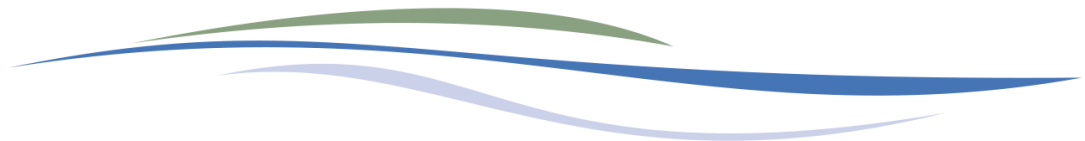
East Bellevue Community Council

Transportation Commission (Study Session)

Planning Commission (Study Session)

Planning Commission (Public Hearing)

Transportation Commission (Public Hearing)



VI. Resources & Staying Involved

Low Impact Development
Principles Project

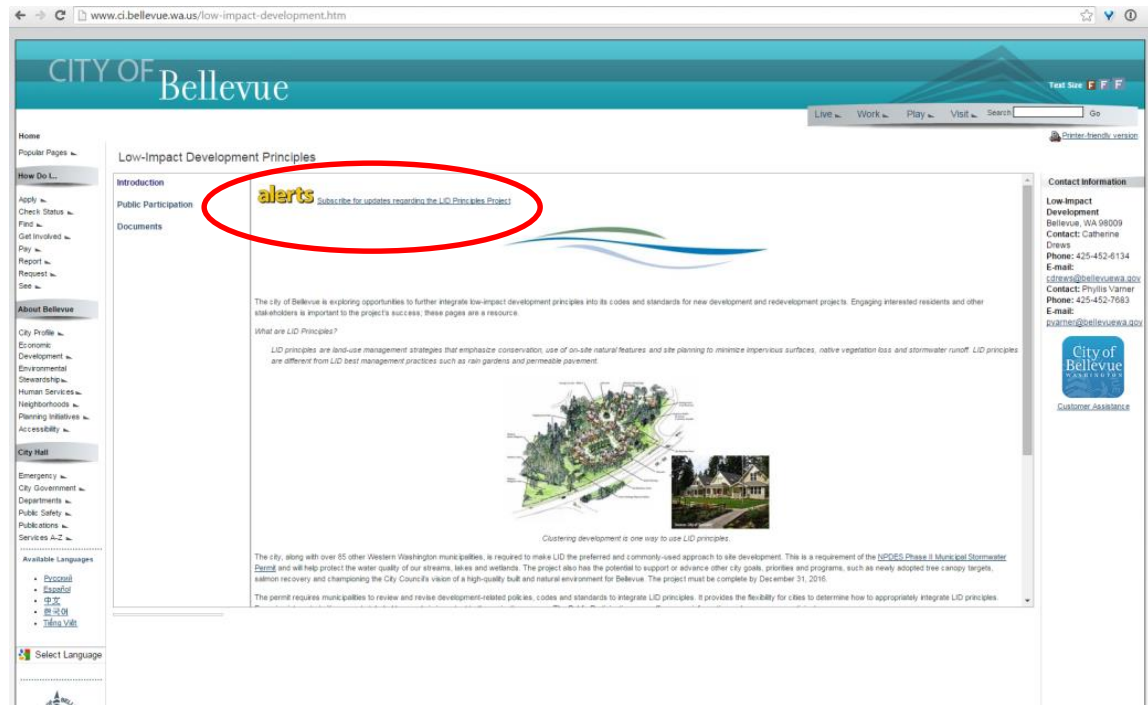


Staying Involved

Other Resources:

City of Bellevue LID Principles Project website:

<https://www.bellevuewa.gov/low-impact-development.htm>



Low Impact Development Principles Project